Fish & Richardson P.C.

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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number: 07072-946001	
I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, Box 1450, Alexandria, VA 22313-1450.	Application Number 10/081,682		Filed February 25, 2002
	First Named Inventor Arnon Naamad et al.		
Date of Deposit	Art Unit 2651		Examiner Lev Iwashko
Signature			
Typed or Printed Name of Person Signing Certificate			

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record 41,942
(Reg. No.)

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Registration number if acting under 37 CFR 1.34

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October 20, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ Total of 3 forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Amnon Naamad et al.	Art Unit	: 2651
Serial No.	: 10/081,682	Examiner	: Lev Iwashko
Filed	: February 25, 2002	Conf. No.	: 2103
Title	: MANAGEMENT OF INVALID TRACKS		

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicant requests a review of identified matters on appeal by a panel of examiners. Applicant submits that the rejections of record are clearly improper and without basis, in view of a clear legal or factual deficiency in the rejections.

Reference is hereby made to arguments already of record as set forth in responses filed on June 5, 2006 and on August 14, 2006.

Section 102 rejection of Claim 1

In attempting to read claim 1 on *Candelaria*, it is important to identify which particular element in *Candelaria* is a "data storage unit" and which is a "data storage element." In particular, claim 1 recites:

"providing a data structure having an entry corresponding to said data storage unit"

The Examiner regards the track information block ("TIB") as being the "data structure" recited in claim 1. This TIB has an entry for every record.[1] Therefore, the "data storage unit" that corresponds a particular "entry" in the TIB must be a data record.

Claim 1 requires that each entry of the TIB have "status information" that indicates

"whether at least one constituent data storage element of said data storage unit is in said first state"

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[1] *Candelaria*, col. 7, lines 20-21 ("The track information block has addresses for each record of a track that is in the cache.").

The Examiner apparently regards volatile and non-volatile storage to be "data storage elements."[2] Thus, in the Examiner's view, examples of "data storage elements" are hardware devices, such as disk drives (non-volatile) and cache memories (volatile).

But a data record (i.e., the "data storage unit") does not "include" a disk drive. Nor does a data record "include" a cache memory. Clearly, neither a disk drive nor a cache memory can be a constituent part of a data record. If anything, it would be the cache memory or disk drive that "includes" the data record.

The specification states that data storage elements *comprise* the data storage unit. One example given is that of a cylinder (i.e., data storage unit) that is made up of tracks (i.e., data storage elements). This is also required by the preamble, which refers to "a data storage unit that includes at least two constituent data storage elements."

In the advisory action, the Examiner states that claim 1's "data storage unit" can be "a particular storage memory, or a storage partition, or a storage block or segment,…". In doing so, the Examiner goes beyond the teaching of *Candelaria*. *Candelaria* states that the entries in the TIB correspond to *records*. *Candelaria* does not teach that entries in the TIB correspond to anything *but* records. In a section 102 rejection, the Examiner is supposed to rely on what the reference actually teaches, and not on what it *could* teach.

Similarly, in the advisory action, the Examiner states that claim 1's "data storage element" can be a "data block (or line or segment) or address (line or block or segment)." But *Candelaria* teaches none of this. In fact, *Candelaria* fails to teach anything that could be a "data storage element" as recited by the claim. The Examiner's recitation of what the "data storage element" *could* be is not actually supported by the reference. In making a section 102 rejection, it is improper to go beyond what a reference teaches.

A proper section 102 rejection requires that *Candelaria* disclose each and every limitation of the claim. It is apparent that *Candelaria* fails to disclose a data storage *element* that is a constituent part of a data storage *unit*. It is also apparent that *Candelaria*

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[2] *First Office Action*, page 2, in referring to the placement of non-volatile storage in a failed state, the Examiner says "[t]he above two sentences show that there are at least two states for the storage elements".

fails to disclose a data structure in which an entry has status information indicating that at least one data storage *element* of that data storage *unit* is in a particular state.

Section 102 rejection of claim 8, 20 and 27

Claim 8 recites the additional limitations of choosing the "data storage unit" to be a cylinder and choosing the "data storage element" to be any of the tracks from that cylinder. Claims 20 and 27 recite similar limitations.

In rejecting claim 8, the Examiner draws attention to text[3] that essentially describes the existence of cylinders and their constituent tracks. However, the existence of cylinders and tracks is not what is claimed.

Claim 8 recites providing a data structure having an entry that corresponds to a *cylinder*. But *Candelaria* states that the TIB "has addresses for each *record* of a *track* that is in the cache."[4] The fact that *Candelaria* discloses the existence of cylinders and tracks does not change what *Candelaria* teaches about the entries of the TIB.

Candelaria clearly teaches that the TIB entries correspond to *records*. A record is *not* a cylinder.[5] Therefore, *Candelaria* does not teach providing a data structure having an entry that corresponds to a *cylinder*.

Section 102 rejection of claims 5 and 17

Claims 5 and 17 require the additional limitation of "detecting that a constituent data storage element [of the data storage unit] is in a second state [other than the first state]." The Examiner suggests that a data storage element in this second state is disclosed by the following:

> "Modification is marked in the track information block which is in a special store owned by the storage path."[6]

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[3] *Candelaria*, col. 8, lines 59-63 ("In some systems redundant records exist in an out of synchronization cylinder range. Existence of such a range is verified at step 148. If all the tracks test is valid step 150 we may destage the tracks from the out of synchronization cylinder range (step 152).").

[4] *Candelaria*, col. 7, lines 21-22.

[5] *Candelaria*, col. 7, lines 9-11 ("A record in DASD is uniquely described as to location by a device number, a cylinder and a track head.")

[6] *Candelaria*, col. 7, lines 35-37.

Thus, the Examiner seems to regard the two states as being whether or not a record has been modified. The "constituent data storage element" must then be one of *Candelaria's* records.

However, the entries of the TIB correspond to data storage *units*, not data storage *elements*. Since the entries of the TIB correspond to records, it follows that the records must be the data storage *units*.

The records referred to in *Candelaria* cannot be both *units* and *elements* at the same time. To do so would be inconsistent with claim 1's preamble, which requires "a data storage *unit* that includes at last two constituent data storage *elements*."

Section 102 rejection of claims 11 and 23

Claims 11 and 23 recite "scanning said data structure."

In the second office action,[7] the Examiner suggests that this limitation is met because *Candelaria* teaches that "[i]f no chains are broken, the track information block is read and compared (step **124**) against directory entries."[8]

However, reading an entry from the TIB is not the same as scanning the TIB. Moreover, according to FIG. 4A, to which the foregoing passage refers, it is the hash chains that are scanned, or "traversed" (step **120**). These hash chains are part of the scatter index table, and not part of the TIB.[9]

Section 103 rejection of claims 10, 22, 29

The Examiner proposes to combine *Mikkelsen* with *Candelaria* because doing so would enable the system to "run more accurately and efficiently."

The proposed reason for combining the reference amounts to a conclusory assertion that is not based on any teaching in the references or in knowledge generally available to one of ordinary skill in the art. Accordingly, the proposed reason for

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[7] *Second office action*, pages 24-25.

[8] *Candelaria*, col. 8, lines 25-27.

[9] *Candelaria*, col. 7, lines 6-9 ("One data structure present in track caching systems is the scatter index table (SIT). The SIT is a hash table providing indexes into directory entries for track images in cache").

combining the references is inconsistent with MPEP 2143.01, and with the standards set forth in *In re Fine* and *In re Jones*, both of which are cited therein.

There is no suggestion in *Candelaria* that the system disclosed therein is somehow inaccurate or inefficient. Nor is there any indication as to why a providing a bitmap from *Mikkelsen* would help.

In fact, the propose modification would simply add extra steps to the process set forth in *Candelaria*. It is well known in the art of computer programming that adding extra steps to a process can increase execution time and program complexity, which may in turn increase the likelihood of programming errors.

Applicant encloses a notice of appeal together with authorization to charge our deposit account 06-1050 for the appeal fee. No additional fees are believed to be due. However, to the extent fees are due, or if a refund is forthcoming, please adjust on deposit account 06-1050, referencing attorney docket "07072-946001."

Respectfully submitted,

Date: Oct 20 2006

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